A New Species of *Abronia* (Nyctaginaceae) from San Juan County, New Mexico, U.S.A.

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ABSTRACT. A new species of *Abronia* is described from northwestern New Mexico, U.S.A., as *Abronia bolackii* N. D. Atwood, S. L. Welsh & K. D. Heil. It is compared to *A. nana* S. Watson based on similarities in stature and anthocarp structure and to *A. fragrans* Nuttall in the caulescent stems. A key to closely related taxa is included.

Key words: *Abronia*, New Mexico, nomenclature, North America, Nyctaginaceae.

The new *Abronia* is part of voucher specimens collected during the 1999 and 2000 field seasons for the San Juan Basin Flora Project. The flora covers all the drainage system and lands in the four corners area of Arizona, Colorado, New Mexico, and Utah that drain into the San Juan River. The target date for publication is 2006. Exploration of the unique habitats in the San Juan Basin area has yielded new state and county records, as well as new taxa. As this study progresses we expect additional taxa will be discovered and named over the next decade or so. Initial attempts at identification were made by use of the early treatments of *Abronia* in New Mexico by Standley (1909), Tidestrom and Kittell (1941), Martin and Hutchins (1980), and the treatment by Galloway (1975). The specimens proved contrary to all of the existing treatments of the genus. The collections of an unidentified species of *Abronia* were subsequently compared to the large set of reference material at Brigham Young University (BRY), as well as that at San Juan College (SJNM), and identified as a new species. Two additional collections from New Mexico were provided by Richard Spellenberg, New Mexico State University (NMC).

Abronia bolackii N. D. Atwood, S. L. Welsh & K. D. Heil, sp. nov. TYPE: U.S.A. New Mexico: San Juan Co., tributary of Stuart Canyon S of San Juan River on Bolack Ranch, 36°40′27.8″N, 108°8′51.4″W, 18 May 2000, *N. Duane Atwood, Kenneth Heil, Steve O'Kane & Arnold Clifford 25673* (holotype, BRY; isotypes, ARIZ, ASU, GH, MO, NY, RM, SJNM, US). Figure 1.

Similis *A. nana* in habitu generali sed rhizomatibus gracilis repentibus, caulibus longioribus, foliis et fructiferis bracteis majoribus, corollae tubo breviori et floribus viridi-albidis, et inflorescentiis axillaribus nec scaposis absimilis; et similis *A. fraganti* in caulibus elongatis sed in rhizomatibus elongatis perianthiis brevioribus et anthocarpis parvioribus et pubescentiis differt.

Perennial, the stems 9–18 cm high above ground, arising from vertical branches from cord-like creeping rhizomes and forming extensive colonies; aerial stems short-caulescent with 1–3 apparent internodes, these shorter than the leaves, puberulent; leaf blades, 1–2.8 × 0.5–1.6 cm wide, elliptic, oblong to ovate, entire, the margins puberulent; petiole 0.5–3.2 cm long; inflorescence glandular-puberulent; the peduncles 1.8–5.5 cm long; bracts 5, green becoming white at maturity, broadly ovate, rounded or apiculate, 6–10 × 4–10 mm, with evident white interrupted veins; flowers 16 to 25 per head, the perianth green-white, the tube 7–11 mm long, glandular, the lobes ca. 3 mm wide; anthocarps obconic, (3- to) 5-winged or angled, puberulent, 5–6.7 mm long.

Habitat and distribution. Gypsiferous clay lens of the Ojo Alamo Formation, from 1678 to 1724 m elevation, in *Juniperus, Hilaria, Amelanchier, Purshia,* and *Ephedra* community. Known only from San Juan County, New Mexico (Fig. 2).

The species is named for Tommy Bolack, the owner and operator of the B-Square Ranch. For years Mr. Bolack has practiced conservation and watershed management and has helped protect the native flora against habitat loss and habitat fragmentation due to development. Along with San Juan College, Mr. Bolack is helping fund the San Juan Flora Project. The type locality of *A. bolackii* is situated in the southeastern portion of his ranch.

Abronia bolackii is similar in stature and anthocarp structure (size and shape) to *A. nana* as indicated in the diagnosis. However, the new taxon differs from *A. nana,* in being caulescent and lack-

Figure 1. *Abronia bolackii* N. D. Atwood, S. L. Welsh & K. D. Heil. —A. Habit. —B. Anthocarps, top view (left) and side view (right). —C. Flowers and bracts (left) and top view of flower cluster (right). Drawn from the type collection, *Atwood et al. 25673* (BRY).

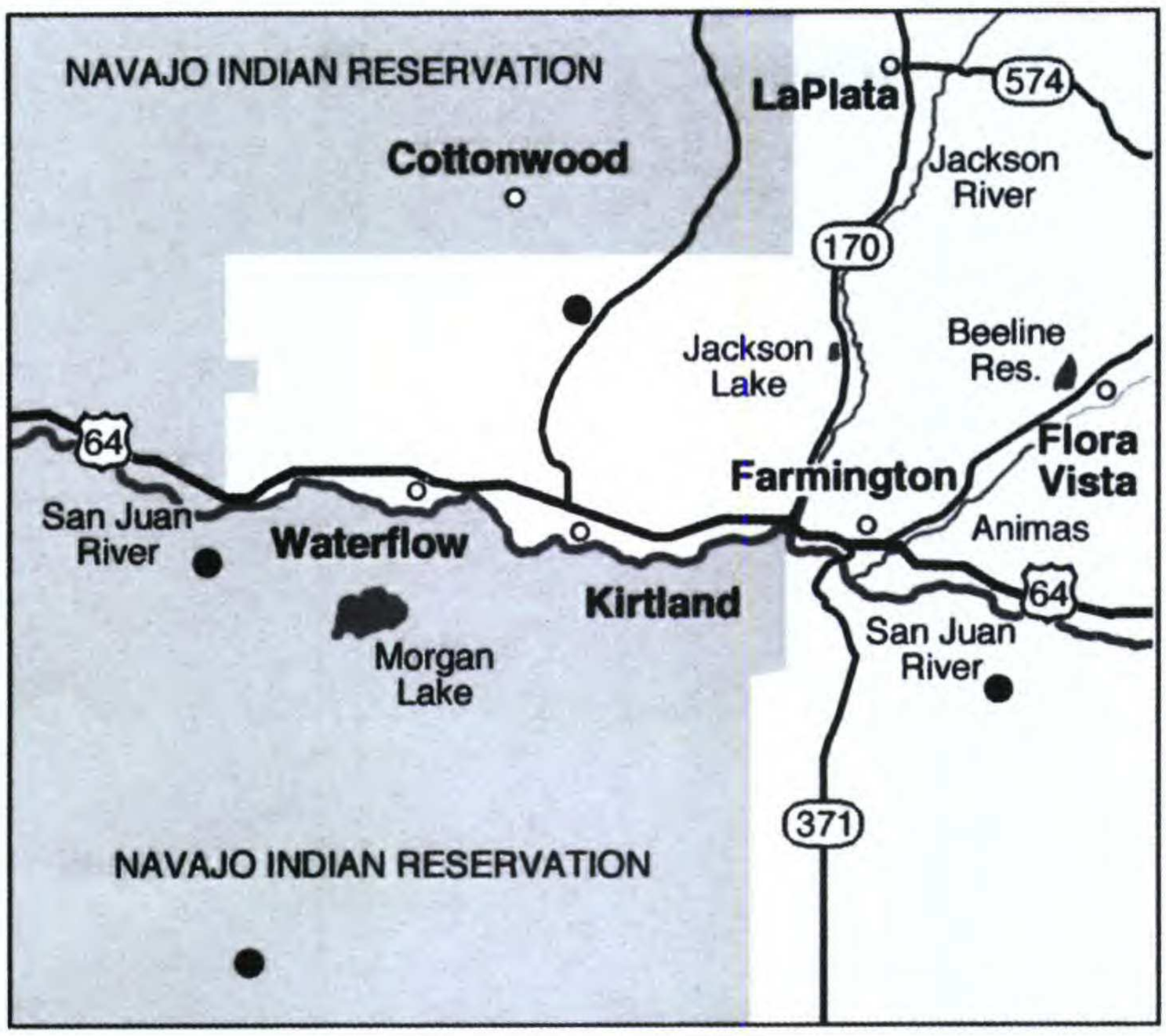

Figure 2. Collection locations of *Abronia bolackii* in San Juan County, New Mexico, U.S.A.

ing persistent leaf bases, not caespitose-subacaulescent and with persistent leaf bases, and in possessing a slender, creeping rhizome. The caulescent nature of *A. bolackii* is similar to and probably indicative of relationship with caulescent *Abronia fragrans*, which occurs in the general vicinity. It differs from that species in being rhizomatous and having shorter and smaller perianths, with the tube 7–11 mm long in *A. bolackii* and 10–25 mm in *A. fragrans*. Additionally, *A. fragrans* is a much larger plant with different anthocarp morphology, larger thicker leaves, usually larger flowers, a taproot, and longer, multicellular, dense trichomes on the anthocarps. Closely allied species, both geographically and possibly genetically based on its morphologic similarities, can be distinguished by the following key:

Key to Related Taxa

1a. Plants definitely caulescent; caudex arising from deep-seated rhizomes or from a taproot, seldom with a thatch of marcescent leaf bases.
  2a. Plants with slender, cordlike deep-seated rhizomes, forming extensive colonies; flowers greenish white, the tube 7–11 mm long; anthocarps 5–6.7 mm long, the apex short hairy with simple hairs . . . . . *A. bolackii*
  2b. Plants lacking rhizomes, arising from taproots; flowers greenish to rose or purplish, the tube 10–25 mm long; anthocarps 5–12 mm long, the apex more densely pubescent with longer multicellular hairs . . . . *A. fragrans*
1b. Plants subscapose, the leaves mostly all basal; caudex often with a thatch of marcescent leaf bases, situated atop a thickened taproot . . *A. nana*

Paratypes. U.S.A. **New Mexico:** San Juan County, B-Square Ranch, first road SE near mouth of Stewart Canyon, up road ca 1.5 mi., 36°40′23.5″N, 108°08′57.3″W, 18 May 2000, *K. Heil 14289* (SJNM); 10 mi. SSW of Waterflow on the Navajo Mine W of the Neck, 2 June 1985, *R. Spellenberg & R. Corral 8213* (NMC); 6 mi. N of Fruitland, T29N, R14W, S7, 12 May 1994, *R. Sivinski & K. Lightfoot 2665* (NMC).

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